

ABSTRACT OF THE DISCLOSURE

The X, Y and Rx positions of a mask stage are measured using two optical encoder-reading heads measuring displacements of respective grid
5 gratings mounted on the mask stage. The grid gratings are preferably provided on cut-away portions of the mask table so as to be co-planar with the pattern on the mask itself. Measurements of the table position in the other degrees of freedom can be measured with capacitive or optical height sensors.